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**POSSIBILITIES FOR DEVELOPING RESEARCH ON MEDICAL  
PROBLEMS OF SPECIAL SIGNIFICANCE TO THE  
POLISH NATIONAL ECONOMY**

**by Ksawery Rowinski**

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## FOREWORD

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POSSIBILITIES FOR DEVELOPING RESEARCH ON MEDICAL  
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POLISH NATIONAL ECONOMY

Following is the translation of an article  
by Ksawery Rowinski in Polski Tygodnik Lek-  
arski (Polish Medical Weekly), Vol XV, No  
49, Warsaw, 5 December 1960, pages 1898 -  
1900.<sup>7</sup>

With reference to my article, "The Situation in  
Medical Academies with Regard to Scientific Research  
and Staff," (Polski Tygodnik Lekarski, 22 and 29 August  
1960) and their reference to "Index of Scientific Pro-  
jects Undertaken in Institutions and Clinics of Medical  
Academies and Scientific Institutes in 1960," published  
on my initiative by the Ministry of Health and Social  
Welfare, I should like to discuss certain aspects of the  
possibilities for the realization of scientific research  
on recently designated "medical problems of special sign-  
ificance to the national economy" which are to be includ-  
ed in the Nationwide Scientific Research Plan for the  
years 1961-1965.

In consultation with the government, the Depart-  
ment of Medical Sciences of the Polish Academy of Sciences  
has designated the following problems to be of special  
significance for the years 1961-1965:

1. Research in virology:
  - a) Development of methods of virological  
diagnosis and search for new viruses:
  - b) Research on the biology and genetics of  
viruses:
  - c) Development of methods for obtaining anti-  
virus vaccines (influenza, poliomyelitis, measles, infect-  
ious jaundice);
  - d) Research on pathogenesis and control of  
rickettsias.

2. Research on neoplasm:
  - a) Research on the etiology and pathogenesis of neoplasm;
  - b) Knowledge of the pathomorphology of neoplasm (histological clinic);
  - c) Pathophysiological study of neoplasm carrying organisms, especially those with hormone dependent neoplasm and neoplasm in children;
  - d) Development of methods of neoplasm diagnosis;
  - e) Establishment of theoretical bases for radiation treatment of neoplasm;
  - f) Development of neoplasm therapy methods, especially pursuing new directions (chemotherapy);
  - g) Epidemiological study of neoplasm.
3. Research on diseases of the circulatory system with particular emphasis on arteriosclerosis and arterial hypertension. Epidemiological, experimental, anatomopathological and clinical research with emphasis on early diagnosis, treatment and prophylaxis.
4. Research on the physiological and pathophysiological problems of industrial medicine in the face of technical progress:
  - a) Research on the rationalization of the production process and of work productivity from the physiological point of view;
  - b) Research on the effects of new production processes on the state of health;
  - c) Research on early diagnosis of occupational diseases;
  - d) Research on occupational fitness particularly in young people;
  - e) Research on the causes of sickness-motivated absenteeism.
5. Establishment of principles for the rational nutrition of healthy and sick persons:
  - a) Evaluation of the state of nutrition of selected groups of the population;
  - b) Development of the standards of nutrition;
  - c) Establishment of the role of nutrition in the occurrence of civilization diseases;
  - d) Study of the biological value of basic nutrition sources;
  - e) Research on the hygiene of group nutrition;
  - f) Development of the principles of dietetics.
6. Research on the effects of ionizing radiation on the organism:
  - a) Research in radiobiology;

b) Establishment of theoretical bases BHP (Bezpieczeństwo i Higiena Pracy -- Industrial Safety and Hygiene);

c) Research in nuclear medicine.

7. Research on pathogenesis, therapy and prophylaxis of mental disturbances:

a) Research on the pathogenesis of schizophrenia and on methods of therapy, particularly its early forms;

b) Research on temporal epilepsy and its treatment;

c) Research on the environmental factor in the formation of nervous disorders and the pathogenesis and treatment of nervous disorders;

d) Research on mental disturbances due to aging (prophylaxis and treatment);

e) Research on mental disturbances in children with particular emphasis on prophylaxis and environmental conditions;

f) Research in social psychiatry (mental hygiene).

8. Research on new drugs:

This research should be aimed at finding antineoplasia drugs, anti-arteriosclerosis drugs, hypotension drugs, tranquilizers, antibiotics and others.

9. Research on the physiological, mental and social conditions for rehabilitation:

a) Following polio, b) following apoplexy, c) following damage to the marrow, d) deformations of the spine, e) with rheumatism, f) with diseases of the circulatory system, g) with tuberculosis.

Furthermore, after consultation with the government, the Department of Medical Sciences designated three further problems as particularly significant. They are the following:

10. Research on hereditary factors and the pathology of the fetus as causes of congenital defects and their prophylaxis and treatment.

11. Research on allergies:

a) Rheumatic heart disease and rheumatism of the joints;

b) Kolagenozy [?];

c) Bronchial asthma;

d) Allergic diseases.

12. Research on the pathogenesis of shock:

a) Research on the role of the nervous system in the pathogenesis of shock;

b) Research on the treatment of the after-

effects of shock;

c) Research on shock prophylaxis;

d) Research on hemodynamic, biochemical and immunological phenomena in shock;

For comparison purposes we could here briefly outline the scientific problems considered to be particularly important by the World Health Organization (according to material of 20 April 1959).

The World Health Organization decided to promote intensification of scientific research in the following fields (I list them in the order of greatest allocation and I exclude the fields which are of no interest to us, such as research in the field of leprosy, cholera, bilharziasis, malaria):

- 1) Virus diseases and rickettsias - (\$450,000);
- 2) Cancer (\$325,000);
- 3) Insecticides; the fight against resistance to insecticides, destruction of carriers (\$300,000);
- 4) Cardiac and vascular diseases (\$225,000);
- 5) Tuberculosis (\$200,000);
- 6) Ionizing radiation and human genetics (\$125,000);
- 7) Nutrition (\$50,000), but in addition important allocations from the FAO are used on research in this field;

- 8) Antibiotics (\$40,000);

It may also be worthwhile to outline the scientific problems brought up by our neighbors in the Czechoslovak Socialist Republic for the year 1960. These problems include:

1. Problem of protection from the reaction of ionizing radiation;
2. Problem of new drugs;
3. Problem of antibiotics;
4. Problem of diseases caused by bacteria and viruses;
5. Problem of arteriosclerosis;
6. Problem of rational nutrition of man;
7. Problem of sickness-proneness of the population of the Czechoslovak Socialist Republic; workers' proneness to disease joined to the inability to work or invalidism, the problem of death causes; and
8. Problem of health protection against certain chemical compounds.

It appears from the above that the problems brought up in our country are basically similar to world problems and to our neighbors' problems.

The question should perhaps now be answered as to what are the possibilities for developing scientific

research in the given directions. To this end we will study the "index" mentioned in the beginning. In looking through it one realizes that the number of biochemical projects in clinics has greatly increased. The great majority of projects undertaken in clinics is concerned with the problems of physiopathology. The casuistic theme is represented to a minimal degree in this index. It is worth mentioning that histochemical projects are also beginning to be presented by certain clinics. It is quite apparent that in many cases a greater number of workers of a clinic or institution concentrate their efforts on the solution of one problem. But it is also noticeable that in many places similar or the very same themes are undertaken and perhaps the methods and techniques used in individual cases should be confronted for the solution of the same problem.

It should be noted that in Medical Departments of Academies of Medicine the ratio of subjects presented by institutions, therefore mainly basic research, to subjects presented by clinics, which are far more numerous but which carry out a great deal of basic research at present, is 1399:3338, or 42:100.

In certain academies the ratio is increased in favor of the institutions: in Krakau it is 43:100, in Stettin 44:100, in Lublin 55:100, in Zabrze 66:100 and in Bialystok 67:100. In the Warsaw Academy, which has a large number of clinics, the ratio of the number of institutional projects to the number of clinical projects is 29:100, not taking into account the Studium Doskonalenia (practical postdoctorate studies).

These figures or indices point to the unequal development of basic research in Medical Departments of individual Academies of Medicine. It is nevertheless beyond doubt that an important development of this research has taken place during the past few years. Unfortunately the field of stomatological projects is still quite one-sided, mostly strictly professional. There is no large scale basic research in stomatology. In the field of pharmaceuticals the situation varies considerably. I would however indicate that both in research on new drugs and in research on nutrition, individual chairs of Departments of Pharmaceuticals are developing constantly. Certain chairs of the Department of Pharmaceuticals are on a very high level.

The PAN (Polska Akademia Nauk - Polish Academy of Sciences) in consultation with the government has established Problem Teams for all the problems designated. The virology team was entrusted to Prof Przesmycki; the



oncology team to Doctor Kolodziejska; the team for diseases of the circulatory system to Prof Aleksandrow; the team for the effects of ionizing radiation to Prof Zawadowski, the mental disturbances team to Prof Kuligowski, the new drugs team to Prof Supniewski, the rehabilitation team to Prof Gruca, the team for research on hereditary factors and the pathology of the fetus to Prof Roszkowski, the allergy team to Prof Brokman and the team for the pathogenesis of shock to Prof Kowarzyk.

Problem Teams are to draw up research plans in the field of their problems and aim at the development and coordination of this research.

These teams can derive considerably assistance from the "Index of Projects" which are being undertaken this year in Medical Academies and government institutes. This index includes over 6,600 projects. Among these projects there are approximately 40 projects in the field of virology (as against 350 projects in the field of microbiology as a whole), over 240 projects in the field of oncology, 150 projects deal with the problem of arteriosclerosis and hypertension, 190 projects deal with industrial medicine, over 110 projects deal with the problem of nutrition, the effect of ionizing radiation on the organism is dealt with in approximately 80 projects, mental disturbances in approximately 125 projects, the field of new drugs in approximately 200 projects, there are over 50 projects from the field of rehabilitation, approximately 75 projects from the field of the pathology of the fetus, approximately 50 projects from the field of allergy, 45 projects deal with shock. As a whole then 1/5 (approximately 1.355 out of 6.600 projects) of our "scientific potential" was taken up with problems of significance to the national economy even before bringing up "problems of special significance". Nevertheless it is already apparant from this table that more work is required in certain fields. But besides being of valuable assistance to organizers of scientific research, the "index of projects" shows that on the whole, conditions for medical research in scientific centers of the Ministry of Health and Social Welfare have improved considerably and that objective conditions exist for undertaking research in the problems designated. Real deficiencies in staff and equipment are of course apparent in individual fields (e.g. in virology, genetics, and so on), but the task of problem teams and of scientific committees of the Department of Medical Sciences in cooperation with the government, will be to indicate such a plan for the development of scientific centers as to make up current defic-



iciencies.

With regard to the "Index" it should also be noted that the number of projects dealing with the organization of health protection is very small, on the other hand the number of projects dealing with social problems of medicine and problems of prophylaxis is considerably greater.